

**THE FEDERAL SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND**

---

**COMMUNICATION**

**FROM**

**THE BOARD OF TRUSTEES, THE FEDERAL  
SUPPLEMENTARY MEDICAL INSURANCE  
TRUST FUND**

**TRANSMITTING**

**THE 1989 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE  
FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND,  
PURSUANT TO 42 U.S.C. 401(c)(2), 1395i(b)(2), 1395t(b)(2)**



**APRIL 26, 1989.—Referred jointly to the Committee on Ways and Means  
and Energy and Commerce, and ordered to be printed**

---

**U.S. GOVERNMENT PRINTING OFFICE**

**WASHINGTON : 1989**



LETTER OF TRANSMITTAL

Board of Trustees of the  
Federal Supplementary Medical Insurance Trust Fund  
Washington, D.C., April 24, 1989

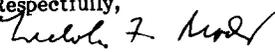
HONORABLE JAMES C. WRIGHT, JR.  
Speaker of the House of Representatives  
Washington, D.C.

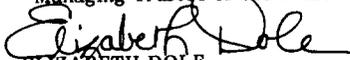
HONORABLE DAN QUAYLE  
President of the Senate  
Washington, D.C.

GENTLEMEN:

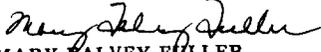
We have the honor of transmitting to you the 1989 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund (the 24th such report), in compliance with the provisions of section 1841(b) of the Social Security Act.

Respectfully,

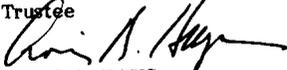
  
NICHOLAS F. BRADY,  
Secretary of the Treasury, and  
Managing Trustee of the Trust Fund

  
ELIZABETH DOLE,  
Secretary of Labor,  
and Trustee

  
LOUIS W. SULLIVAN, M.D.,  
Secretary of Health and  
Human Services, and Trustee

  
MARY FALVEY FULLER,  
Trustee

  
SUZANNE DENBO JAFFE,  
Trustee

  
LOUIS B. HAYS,  
Acting Administrator of the Health Care  
Financing Administration, and Secretary,  
Board of Trustees



**1989 ANNUAL REPORT OF THE BOARD OF  
TRUSTEES OF THE FEDERAL SUPPLEMENTARY  
MEDICAL INSURANCE TRUST FUND**

**COMMUNICATION**

**From**

**THE BOARD OF TRUSTEES, FEDERAL  
SUPPLEMENTARY MEDICAL INSURANCE  
TRUST FUND**

**Transmitting**

**THE 1989 ANNUAL REPORT OF THE BOARD, PURSUANT TO  
SECTION 1841(b) OF THE SOCIAL SECURITY ACT  
AS AMENDED**

**(v)**



## CONTENTS

	Page
The Board of Trustees .....	1
Executive Summary .....	2
Social Security Amendments Since the 1988 Report .....	9
Nature of the Trust Fund .....	13
Summary of the Operations of the Trust Fund, Fiscal Year 1988 .....	19
Expected Operations and Status of the Trust Fund During the Period October 1, 1988 to December 31, 1991 .....	25
Actuarial Status of the Trust Fund .....	31
Conclusion .....	40
Appendices:	
A. Actuarial Methodology and Principal Assumptions for Cost Estimates for the Supplementary Medical Insurance Program .....	42
B. Statement of Actuarial Assumptions and Bases Employed in Determining the Monthly Actuarial Rates and the Standard Monthly Premium Rate for the Supplementary Medical Insurance Program Beginning January 1989 .....	61
C. Catastrophic Coverage Premium .....	71
D. Statement of Actuarial Opinion .....	72

1989 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF  
THE FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND

THE BOARD OF TRUSTEES

The Federal Supplementary Medical Insurance Trust Fund, established on July 30, 1965, is held by the Board of Trustees under the authority of section 1841(b) of the Social Security Act, as amended. The Board has five members. Three serve in an ex officio capacity. These members are the Secretary of the Treasury, the Secretary of Labor, and the Secretary of Health and Human Services. Two public members, Mary Falvey Fuller and Suzanne Denbo Jaffe, are provided for by the Social Security Amendments of 1983 (Public Law 98-21, enacted into law on April 20, 1983). The two public members were nominated by the President for a term of four years and were confirmed by the Senate. Although the original four-year terms of the public members ended in 1988, both of them received recess appointments which extended their terms.

By law, the Secretary of the Treasury is designated as the Managing Trustee, and the Administrator of the Health Care Financing Administration is designated as Secretary of the Board. The Board of Trustees reports to the Congress each year on the operation and status of the trust fund, in compliance with section 1841(b)(2) of the Social Security Act. This is the 1989 annual report, the twenty-fourth such report.

## EXECUTIVE SUMMARY

The supplementary medical insurance (SMI) program pays for physician services, outpatient hospital services, and other medical expenses for both aged 65 and over and for the long-term disabled. Effective January 1, 1990, the SMI program will cover the catastrophic benefits for the catastrophic limit, mammography screening, respite care, and drug therapy. In calendar year (CY) 1988, 31.7 million persons were covered under SMI. General revenue contributions during 1988 amounted to \$26.2 billion, accounting for 73.1 percent of all SMI income. About 24.5 percent of all income resulted from the premiums paid by the enrollees, with interest payments to the SMI fund accounting for the remaining 2.4 percent. Of the \$35.2 billion in SMI disbursements, \$34.0 billion was for benefit payments while the remaining was spent for administrative expenses. SMI administrative expenses were 3.6 percent of total disbursements.

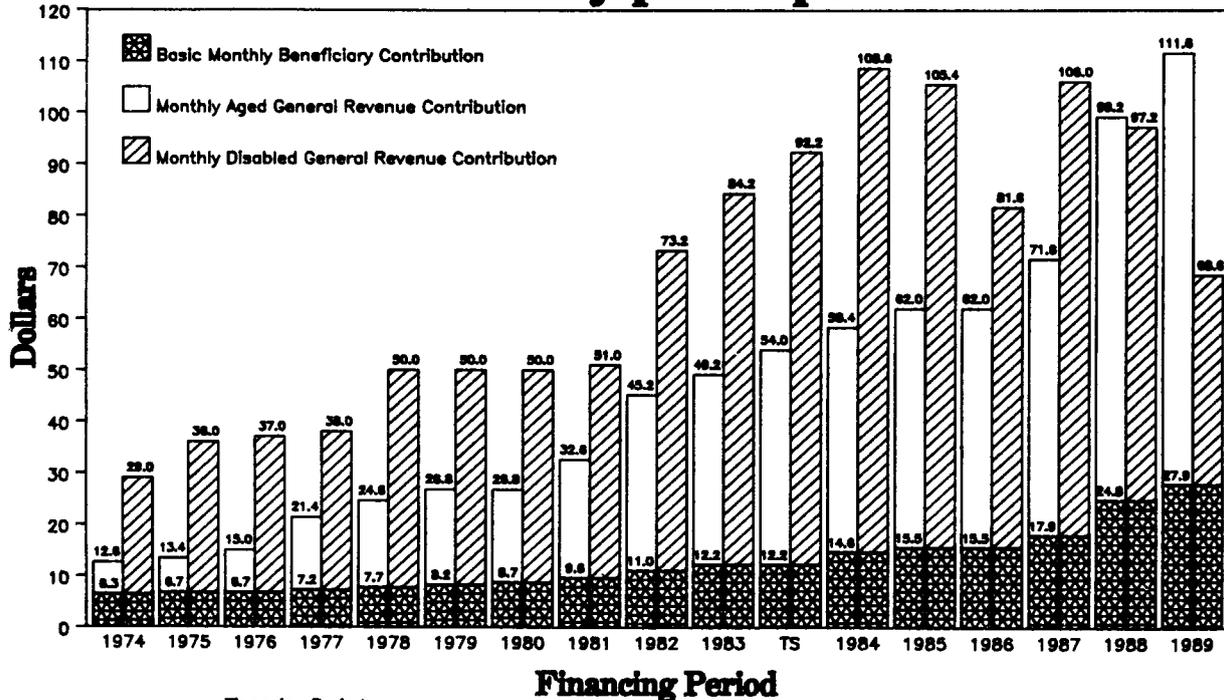
The SMI program essentially is yearly renewable term insurance financed from premium income paid by the enrollees and from income contributed from general revenue. This means that the SMI trust fund should always be somewhat greater than the claims that have been incurred by enrollees but not yet paid by the program. The trust fund holds all of the income not currently needed to pay benefits and related expenses. The assets of the fund may not be used for any other purpose; however, they may be invested in certain interest-bearing obligations of the U.S. Government.

Financing for the non-catastrophic portion of the SMI program, which will be referred to as basic coverage, is established annually on the basis of standard monthly premium rates (paid by or on behalf of all participants) and monthly

actuarial rates determined separately for aged and disabled beneficiaries (on which general revenue contributions are based). Prior to the 6-month transition period (July 1, 1983 through December 31, 1983), these rates were applicable in the 12-month periods ending June 30. Beginning January 1, 1984, the annual basis was changed to calendar years. Monthly actuarial rates are equal to one-half the monthly amounts necessary to finance the SMI program. These rates determine the amount to be contributed from general revenues on behalf of each enrollee. Based on the formula in the law, the Government contribution effectively makes up the difference between twice the monthly actuarial rates and the standard monthly premium rate. Figure 1 presents these values for financing periods since 1974. This figure clearly indicates the extent to which general revenue financing is the major source of income for the program.

Financing for the catastrophic portion of the SMI program is established annually on the basis of the catastrophic coverage monthly premium rates (paid by or on behalf of all participants) and the supplemental catastrophic coverage premium rates. The catastrophic coverage monthly premiums for most SMI enrollees and the supplemental catastrophic coverage premium rates are established through 1993. The supplemental catastrophic coverage premium rate applies to all individuals who are Medicare-eligible for more than 6 full months in a taxable year and have adjusted income tax liability for the taxable year which is at least \$150. The income from the supplemental catastrophic coverage premiums will cover the hospital insurance (HI) program catastrophic expenses first with the excess covering the SMI catastrophic expenses. The catastrophic coverage monthly premiums for most SMI enrollees and the supplemental catastrophic coverage premium rate applicable to years after 1993 are determined by formulas prescribed by law.

**Figure 1**  
**Basic SMI Monthly per Capita Income**



Financing Period:

For periods 1983 and earlier, the financing period is July 1 through June 30.

Transitional semester (TS), the financing period is July 1, 1983 through December 31, 1983.

For 1984 through 1989 the financing period is January 1 through December 31.

### Operations of the SMI Program

Historical and projected operations of the fund through 1991 are shown in Tables 5 and 6 in this report. As can be seen, income has exceeded disbursements for most of the historical years. The financing for basic coverage for CY 1989 was established to increase aged assets and to decrease disabled assets. However, since that time, the experience of the basic program appears to be more favorable than expected. In addition, beginning in CY 1989, the SMI transactions of the Medicare Catastrophic Coverage Account will be added to the SMI trust fund. For CY 1989, these transactions are primarily income transactions since SMI catastrophic benefits are not effective until January 1, 1990. As a result, in CY 1989, income is projected to exceed disbursements, and the trust fund balance is projected to increase through CY 1989.

The financial status of the program depends on both the total net assets and liabilities. It is, therefore, necessary to examine the incurred experience of the program, since it is this experience which is used to determine the actuarial rates discussed above and which forms the basis of the concept of actuarial soundness as it relates to the SMI program.

### Actuarial Soundness of the SMI Program

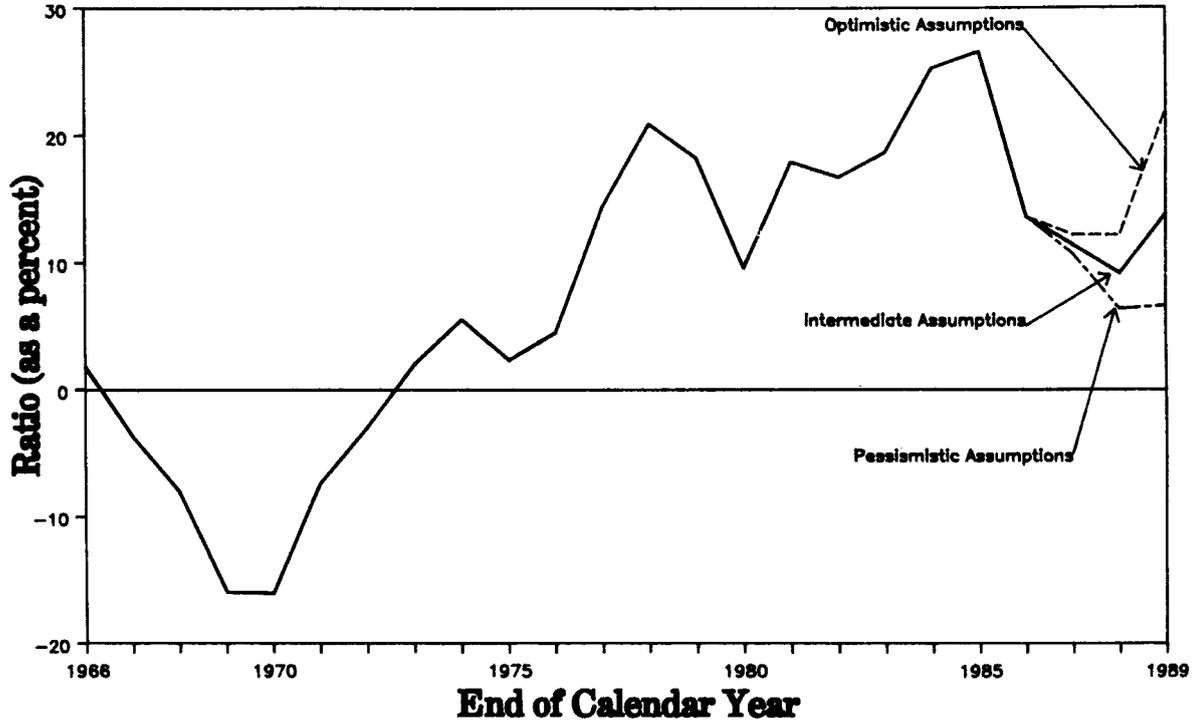
The concept of actuarial soundness, as it applies to the SMI program, is closely related to the concept as it applies to private group insurance. The SMI program is essentially yearly renewable term insurance financed from premium income paid by the enrollees, from income contributed from general revenue, and from interest payments on the trust fund assets.

In testing the actuarial soundness of the SMI program, it is not appropriate to look beyond the period for which the enrollee premium rates and level of general revenue financing have been established. The primary tests of actuarial soundness, then, are that: (1) assets and income for years for which financing has been established be sufficient to meet the projected benefits and associated administrative expenses incurred for that period and (2) assets be sufficient to cover projected liabilities that will have been incurred by the end of that time but will not have been paid yet. Even if these tests of actuarial soundness are not met, the program can continue to operate if the trust fund remains at a level adequate to permit the payment of claims as presented. However, to protect against the possibility that cost increases under the program will be higher than assumed, assets should be sufficient to cover the impact of a moderate degree of variation between actual and projected costs.

The primary tests for actuarial soundness and trust fund adequacy can be viewed by direct examination of absolute dollar levels. In providing an appropriate contingency or margin for variation, however, there must also be some relative measure. The relative measure or ratio used for this purpose is the ratio of the assets less liabilities to the following year's incurred expenditures. Figure 2 shows this ratio for historical years and for projected years under the intermediate assumptions (Alternative II-B), as well as high (pessimistic) and low (optimistic) cost sensitivity scenarios.

Financing for basic coverage for CY 1989 was established to increase aged assets and to decrease disabled assets while maintaining the overall relative level of the excess of assets over liabilities. However, since that time, the experience of the basic program appears to be more favorable than expected. In addition,

**Figure 2**  
**Actuarial Status of the SMI Trust Fund**



Note: The actuarial status of the SMI trust fund is measured by the ratio of the end of year surplus or deficit to the following year incurred expenditures

beginning in CY 1989, the SMI transactions of the Medicare Catastrophic Coverage Account will be added to the SMI trust fund. For CY 1989, these transactions are primarily income transactions since SMI catastrophic benefits are not effective until January 1, 1990. As a result, the excess of assets over liabilities is expected to increase by December 31, 1989.

#### Conclusion of the Board of Trustees

The financing for basic coverage established through December 1989 is sufficient to cover projected benefits and administrative costs for basic coverage through that time period. This financing, along with the financing for SMI catastrophic transactions through December 1989, is sufficient to maintain a level of trust fund assets which is adequate to cover the impact of a moderate degree of variation between actual costs and projected costs. The SMI program can thus be said to be actuarially sound.

Although the SMI program is financially sound, the Board notes with concern the rapid growth in the cost of the program. Growth rates have been so rapid that outlays of the program have nearly doubled in the last five years. For the same time period, the program grew 32 percent faster than the economy as a whole. This growth rate shows no sign of abating despite recent efforts to control the cost of the program. The Board recommends that Congress continue to work to curtail the rapid growth in the SMI program.

## SOCIAL SECURITY AMENDMENTS SINCE THE 1988 REPORT

Since the 1988 Annual Report was transmitted to Congress, the "Medicare Catastrophic Coverage Act of 1988" (Public Law 100-360) was enacted on July 1, 1988. The more important changes resulting from this legislation are described below.

- (1) An annual limit on beneficiary out-of-pocket costs for SMI services is established beginning with 1990. This limit is \$1,370 for the first year, and for subsequent years, it will be set at a level such that a projected 7 percent of SMI beneficiaries, excluding those enrolled in health care prepayment plans (HCPP), health maintenance organizations (HMO), and competitive medical plans (CMP) reach the limit. Payments to reasonable cost HMO and HCPP will be adjusted to reflect the increase in Medicare payment.

Out-of-pocket costs to reach the limit are defined as including the SMI deductible and coinsurance. Once the limit is reached, SMI will pay the costs of the blood deductible, 100 percent of reasonable charges or costs or other reimbursement methods with the exception of in-home care for which payments will remain at 80 percent.

- (2) Coverage is provided for home IV drug therapy services, including nursing, pharmacy and related items and services effective January 1, 1990. However, prescription drugs used for home IV therapy are covered under the Catastrophic Drug Insurance Trust Fund. The coverage of services will not be subject to the SMI deductible or coinsurance, and the payment will be based on the lesser of the provider's actual charge or a fee schedule. The latter will be established before 1990.

- (3) Screening mammography is covered beginning January 1, 1990 for women enrolled in SMI over the age of 35. The amount of the payment will be subject to the SMI deductible and will be equal to 80 percent of the least of: (1) the actual charge for the screening, (2) the fee schedule established by the Secretary, or (3) the limit which will be \$50 in 1990. In subsequent years, the limit will be indexed by the percentage increase in the Medicare Economic Index (MEI).

Payment will be made for only one mammography for those women between ages 35 and 39. Women between ages 40 and 49 may receive payment for annual or biennial screenings dependent on whether they are at a high risk of developing breast cancer. Women between the ages of 50 and 64 may receive payment for annual screenings, and women over 64 years of age may receive payment for biennial screenings.

- (4) Beginning January, 1990, coverage is provided for in-home care for chronically dependent individuals who have been dependent for at least 3 months. This care will be referred to as respite care. The services will be provided beginning on the date that it is determined that the individual has incurred out-of-pocket costs equal to the Part B catastrophic limit or has met the outpatient prescription drug deductible. Payment for respite care services will be made per hour of care provided, on a reasonable cost (or similar cost related) basis. It will be made for a total of up to 80 hours in any 12-month period, but not to exceed 80 hours in a calendar year.
- (5) Home health services benefits have been extended, effective January 1, 1990, by changing the definition of intermittent services from no more

than four days per week to less than seven days per week and by specifying that daily care may now be provided up to 38 consecutive days.

- (6) The SMI premium is increased to finance the catastrophic coverage benefits. The catastrophic coverage monthly premium amount for most enrollees is effective January 1989, and the amount is established by law through 1993. After that time, the premium will be the preceding year's premium adjusted by a percentage representing the sum of: the outlay-premium percentage and the reserve account percentage. The outlay-premium percentage is the percent by which the per capita catastrophic outlays in the second preceding year exceed or are less than the outlays in the third preceding year with an adjustment made for excessive changes in the growth of the consumer price index (CPI). The reserve account percentage allows for adjustments to the catastrophic coverage monthly premium when the balance in the Medicare Catastrophic Coverage Account (see (8) below) deviates from 20 percent of the outlays in the second preceding year.
- (7) Medicare beneficiaries, who are eligible for Medicare Part A for more than 6 months in a calendar year and whose tax liability is \$150 or more, are subject to a supplemental catastrophic coverage premium. Receipts attributable to the supplemental catastrophic coverage premium rate which are not otherwise appropriated to the Federal Hospital Insurance Catastrophic Coverage Reserve Fund are

appropriated to the SMI trust fund. The calculation of the premium amount is discussed in the Annual Report of the Board of Trustees for HI.

- (8) The Medicare Catastrophic Coverage Account is established under this legislation. It will be credited with the receipts of the SMI trust fund attributable to catastrophic coverage, receipts of the Federal Hospital Insurance Catastrophic Coverage Reserve Fund and interest on any positive average balance in the account. It will be debited with outlays attributable to the catastrophic coverage from the HI and SMI trust funds, as well as interest on any negative average balance in the account.

### NATURE OF THE TRUST FUND

The Federal Supplementary Medical Insurance Trust Fund was established on July 30, 1965, as a separate account in the United States Treasury. All the financial operations of the SMI program are handled through this fund.

The major sources of receipts of the trust fund are: (1) contributions of the Federal Government that are authorized to be appropriated and transferred from the general fund of the Treasury and (2) premiums paid by eligible persons who are voluntarily enrolled in the program. The premiums paid by eligible persons include both those specified by the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360) and those needed to finance the non-catastrophic benefits, which will be referred to as basic benefits. Eligible persons aged 65 and over have been able to enroll in the program since its inception in July 1966. Since July 1973, disabled persons under age 65, who have met certain eligibility requirements, have also been able to enroll in the program.

The premiums paid by enrollees for basic benefits are based on the standard monthly premium rate, which is the same for enrollees aged 65 and over and for disabled enrollees under age 65. Premiums paid for Fiscal Years (FY) 1967 through 1973 were matched by an equal amount of Government contributions. Beginning July 1973, the amount of Government contributions corresponding to premiums paid by each of the two groups of enrollees is determined by applying a ratio (known as the matching rate), prescribed in the law for each group, to the amount of premiums received for basic benefits from that group of enrollees. The ratio is equal to: (1) twice the amount of the monthly actuarial rate applicable to the particular group of enrollees, minus the amount of the standard monthly premium rate, divided by (2) the amount of the standard monthly premium rate.

Standard monthly premium rates and actuarial rates are promulgated each year by the Secretary of Health and Human Services. The standard monthly premium rates in effect from July 1966 through June 1983, the rate for July 1983 through December 1983, and the rates for CY 1984 through 1989 are shown in Table 1. Actuarial rates and the corresponding matching rates in effect from July 1973 through June 1983, the rates applicable for July 1983 through December 1983, and the rates for CY 1984 through 1989 are also shown. For a detailed discussion of the determination of the actuarial and premium rates for basic benefits, see Appendix B.

The catastrophic coverage monthly premiums for most SMI enrollees and the supplemental catastrophic coverage premium rates are established through 1993. However, there is a different catastrophic coverage monthly premium for each of the following groups of enrollees: residents of Puerto Rico, residents of other U.S. commonwealths or territories, and enrollees who are not entitled to hospital insurance (HI) benefits and who are not residents of a U.S. commonwealth or territory. The catastrophic coverage monthly premiums for each of the latter groups of enrollees are established through 1990. The supplemental catastrophic coverage premium rate applies to all individuals who are Medicare-eligible for more than 6 full months in a taxable year and have adjusted income tax liability for the taxable year which equals or exceeds \$150. The income from the supplemental catastrophic coverage premiums will cover the HI catastrophic expenses first with the excess covering the SMI catastrophic expenses. The catastrophic coverage monthly premiums for most SMI enrollees and the supplemental catastrophic coverage premium rate applicable to years after 1993 are determined by formulas prescribed in Title XVIII of the Social Security Act and subchapter A of chapter 1 of the Internal Revenue Code of 1986, respectively. The catastrophic coverage monthly premiums for residents of Puerto Rico or for residents of other U.S.

Table 1.--MONTHLY PREMIUM RATES, SUPPLEMENTAL PREMIUM RATES, ACTUARIAL RATES, AND MATCHING RATES

	Monthly premium rates		Basic monthly actuarial rate				Basic matching rate	
	Basic	Catastrophic coverage 1/	Supplemental premium rate 2/	Enrollees aged 65 and over	Disabled enrollees under age 65	Enrollees aged 65 and over	Disabled Enrollees under age 65	
July 1966 - March 1968	\$ 3.00	---	---	---	---	---	---	
April 1968 - June 1970	4.00	---	---	---	---	---	---	
12-month period ending June 30 of --								
1971	5.30	---	---	---	---	---	---	
1972	5.60	---	---	---	---	---	---	
1973	5.80	---	---	---	---	---	---	
1974 3/	6.30	---	---	\$ 6.30	\$14.50	1.0000	3.6032	
1975	6.70	---	---	6.70	18.00	1.0000	4.3731	
1976	6.70	---	---	7.50	18.50	1.2388	4.5224	
1977	7.20	---	---	10.70	19.00	1.9722	4.2778	
1978	7.70	---	---	12.30	25.00	2.1948	5.4935	
1979	8.20	---	---	13.40	25.00	2.2683	5.0976	
1980	8.70	---	---	13.40	25.00	2.0805	4.7471	
1981	9.60	---	---	16.30	25.50	2.3958	4.3125	
1982	11.00	---	---	22.60	36.60	3.1091	5.6545	
1983	12.20	---	---	24.60	42.10	3.0328	5.9016	
July 1983 - December 1983	12.20	---	---	27.00	46.10	3.4262	6.5574	
Calendar year								
1984	14.60	---	---	29.20	54.30	3.0000	6.4304	
1985	15.50	---	---	31.00	52.70	3.0000	5.8000	
1986	15.50	---	---	31.00	40.80	3.0000	4.2645	
1987	17.90	---	---	35.80	53.00	3.0000	4.9218	
1988	24.80	---	---	49.60	48.60	3.0000	2.9194	
1989	27.90	\$4.00	\$22.50	55.80	34.30	3.0000	1.4588	

1/ This is the premium paid by most enrollees. However there is a different catastrophic coverage monthly premium for each of the following groups of enrollees: residents of Puerto Rico, residents of other U.S. territories, and enrollees who are not entitled to HI benefits and who are not residents of a U.S. territory.

2/ The supplemental catastrophic coverage premium rate is for each \$150 of adjusted income tax liability. The income from this premium will cover the HI catastrophic expenses first, with the excess covering the SMI catastrophic expenses.

3/ In accordance with limitations on the costs of health care imposed under Phase III of the Economic Stabilization program, the standard premium rate for July and August 1973 was set at \$5.80 and \$6.10, respectively. Effective September 1973, the rate increased to \$6.30.

commonwealths or territories applicable to years after 1990 are also determined by formulas prescribed by Title XVIII. The catastrophic coverage monthly premium for the SMI only enrollees applicable to years after 1990 will be promulgated by the Secretary of Health and Human Services. The catastrophic coverage monthly premium for most SMI enrollees and the supplemental catastrophic coverage premium rate are shown in Table 1 through the year in which the total financing of the SMI program has been established.

Another source from which receipts of the trust fund are derived is interest received on investments held by the fund. The investment procedures of the fund are described later in this section.

Section 201(i) of the Social Security Act authorizes the Managing Trustee to accept and deposit in the trust fund unconditional money gifts or bequests made for the benefit of the fund or for any activity financed through the fund.

Expenditures for benefit payments and administrative expenses under the program are paid out of the trust fund. All expenses incurred by the Department of Health and Human Services and by the Department of the Treasury in carrying out the SMI provisions of Title XVIII of the Social Security Act are charged to the trust fund. The Secretary of Health and Human Services certifies benefit payments to the Managing Trustee, who makes the payments from the trust fund in accordance therewith.

The Social Security Amendments of 1967 and 1972 authorize the Secretary of Health and Human Services to develop and conduct a broad range of experiments and demonstration projects designed to determine various methods of increasing

efficiency and economy in providing health care services, while maintaining the quality of such services, under the HI and SMI programs. A sizeable portion of such costs of such experiments and demonstration projects are paid out of the HI and SMI trust funds, with the remainder funded through general revenues.

Congress has authorized expenditures from the trust funds for construction, rental and lease, or purchase contracts of office buildings and related facilities for use in connection with the SMI program. Both the capital costs of construction financed directly from the trust fund and the rental and lease, or purchase contract costs of acquiring facilities are included in trust fund expenditures. In 1972-75, construction of several large facilities was authorized under purchase contract authority, wherein initial capital costs were borne by the private sector. Under this method of facilities acquisition, trust fund expenditures for use and ultimate Government ownership of a facility are made over periods of from 10 to 30 years. Whatever the manner of acquisition, the net worth of facilities and other fixed capital assets is not carried in the statement of the assets of the trust fund presented in this report. This is because the value of fixed capital assets does not represent funds available for benefit or administrative expenditures and, therefore, is not viewed as being a consideration in assessing the actuarial status of the funds.

That portion of the trust fund which, in the judgment of the Managing Trustee, is not required to meet current expenditures for benefits and administration is invested in interest-bearing obligations of the U.S. Government (including special public-debt obligations described below), in obligations guaranteed as to both principal and interest by the United States, or in certain federally sponsored agency obligations that are designated in the laws authorizing their issuance as lawful investments for fiduciary and trust funds under the control and authority of

the United States or any officer of the United States. Obligations of these types may be acquired on original issue at the issue price or by purchase of outstanding obligations at their market price.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust fund. The law requires that such special public-debt obligations shall bear interest at a rate based on the average market yield (computed on the basis of market quotations as of the end of the calendar month next preceding the date of such issue) on all marketable interest-bearing obligations of the United States forming a part of the public debt which are not due or callable until after the expiration of 4 years from the end of such calendar month.

**SUMMARY OF THE OPERATIONS OF THE TRUST FUND, FISCAL YEAR 1988**

A statement of the income and disbursements of the Federal Supplementary Medical Insurance Trust Fund in FY 1988 and of the assets of the fund at the beginning and end of the fiscal year is presented in Table 2.

The total assets of the trust fund amounted to \$6,392 million on September 30, 1987. During FY 1988, total receipts amounted to \$35,002 million, and total disbursements were \$34,947 million. Total assets thus increased \$55 million during the year to a total of \$6,447 million on September 30, 1988.

Of the total receipts, \$7,963 million represented premium payments by (or on behalf of) enrollees aged 65 and over, and \$793 million represented premium payments by (or on behalf of) disabled enrollees under age 65. Total premium payments amounted to \$8,756 million, an increase of 35.1 percent over the amount of \$6,480 million for the preceding year. This increase in premiums from enrollees resulted primarily from: (1) the increase from \$17.90 to \$24.80 per month in the standard premium rate that became effective on January 1, 1988 and (2) the growth of the number of persons enrolled in the SMI program.

Contributions received from the general fund of the treasury amounted to \$25,418 million, which accounted for 73 percent of total receipts. This amount consisted of \$22,830 million representing contributions relating to premiums paid by enrollees aged 65 and over, and \$2,588 million representing contributions relating to the premiums paid by disabled enrollees under age 65. The remaining \$828 thousand of receipts consisted almost entirely of interest on the investments of the trust fund.

Table 2.--STATEMENT OF OPERATIONS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND DURING FISCAL YEAR 1988  
(In thousands)

Total assets of the trust fund, beginning of period.....		\$ 6,392,394
Receipts:		
Premiums from enrollees:		
Enrollees aged 65 and over.....	\$ 7,963,135	
Disabled enrollees under age 65.....	792,613	
Total premiums.....		8,755,748
Transfers from general fund of the Treasury:		
Government contributions:		
Supplementary premiums of enrollees aged 65 and over.....	22,829,939	
Supplementary premiums of disabled enrollees under age 65...	2,588,061	
Total Government contributions.....		25,418,000
Other.....		3
Interest:		
Interest on investments.....	822,973	
Interest on amounts of interfund transfers *.....	5,128	
Total interest.....		828,101
Total receipts.....		35,001,852
Disbursements:		
Benefit payments.....		33,681,771
Administrative expenses:		
Treasury administrative expenses.....	1,253	
Salaries and expenses - SSA.....	214,204	
Salaries and expenses - NCFA.....	1,021,647	
Salaries and expenses Office of Secretary.....	11,102	
Construction.....	12,416	
Professional Standard Review Organization.....	0	
Public Health Service.....	821	
Reimbursement of SSA expenses.....	0	
Reimbursement of NCFA expenses.....	0	
Pay Assessment Commission.....	539	
Office of Personnel Management expenses.....	85	
Physicians Payment Review.....	2,997	
Total administrative expenses.....		1,265,064
Total disbursements.....		34,946,835
Net addition to the trust fund.....		55,017
Total assets of the trust fund, end of period.....		6,447,411

\* A positive figure represents a transfer of interest to the SMI trust fund from the other trust funds.  
A negative figure represents a transfer of interest from the SMI trust fund to the other trust funds.

NOTE: Totals do not necessarily equal the sum of rounded components.

Of the \$34,947 million in total disbursements, \$33,682 million represented: (1) benefits paid directly from the trust fund for health services covered under Title XVIII of the Social Security Act and (2) costs of experiments and demonstration projects in providing health care services.

The remaining \$1,265 million of disbursements was for administrative expenses. Administrative expenses are allocated and charged directly to each of the four trust funds—old age and survivors insurance, disability insurance, HI, and SMI—on the basis of provisional estimates. Similarly, the expenses of administering other programs of the Health Care Financing Administration are also allocated and charged directly to the general fund of the Treasury on a provisional basis. Periodically, as actual experience develops and is analyzed, the allocations of administrative expenses and costs of construction for prior periods are adjusted by interfund transfers. This adjustment includes transfers between the HI and SMI trust funds and the program management general fund account, with appropriate interest allowances.

In Table 3, the experience with respect to actual amounts of enrollee premiums, Government contributions, and benefit payments in FY 1988 is compared with the estimates for FY 1988 which appeared in the 1987 and 1988 annual reports.

Table 4 shows a comparison of the total assets of the fund and their distribution at the end of FY 1987 and at the end of FY 1988. The assets of the trust fund at the end of FY 1987 totaled \$6,392 million, consisting of \$6,166 million in the form of obligations of the U.S. Government, and an undisbursed balance of \$226 million. The assets of the trust fund at the end of FY 1988 totaled \$6,447 million, consisting of \$6,326 million in the form of obligations of the U.S. Government and

Table 3.--COMPARISON OF ACTUAL AND ESTIMATED OPERATIONS OF  
THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND,  
FISCAL YEAR 1988  
(Dollar amounts in millions)

Item	Comparison of actual experience with estimates for FY 1988 published in --				
	Actual amount	1988 report		1987 report	
		Estimated amount	Actual as percentage of estimate	Estimated amount	Actual as percentage of estimate
Premiums from enrollees	\$ 8,756	\$ 8,719	100	\$ 8,536	103
Government contributions	25,418	25,418	100	25,152	101
Benefit payments	33,682	33,992	99	34,089	99

Table 4.--ASSETS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND  
AT THE END OF FISCAL YEARS 1987 AND 1988 \*

	September 30, 1987	September 30, 1988
Investments in public-debt obligations sold only to this fund (special issues):		
Certificates of indebtedness:.....	--	\$ 8,558,000.00
Bonds:		
8 1/4-percent, 1989-93.....	\$ 110,095,000.00	--
8 3/8-percent, 2001.....	444,270,000.00	444,270,000.00
8 3/4-percent, 1989-94.....	399,662,000.00	--
9 1/4-percent, 1991-93.....	--	1,136,139,000.00
9 3/4-percent, 1995.....	115,003,000.00	115,003,000.00
10 3/8-percent, 1989-2000.....	1,895,771,000.00	1,661,292,000.00
10 3/4-percent, 1989-98.....	897,291,000.00	809,231,000.00
13 1/4-percent, 1989-97.....	1,076,184,000.00	1,033,983,000.00
13 3/4-percent, 1989-99.....	1,227,792,000.00	1,117,677,000.00
Total investments in public-debt obligations.....	6,146,068,000.00	6,326,153,000.00
Undisbursed balance.....	226,325,935.86	121,258,054.76
Total assets.....	6,392,393,935.86	6,447,411,054.76

\* The assets are carried at par value, which is the same as book value.

an undisbursed balance of \$121 million. A comparison of assets of the trust fund with liabilities for incurred but unpaid benefits (and related administrative expenses) is shown in a later section.

The net increase in the par value of the investments held by the fund during FY 1988 amounted to \$160 million. New securities at a total par value of \$37,816 million were acquired during the fiscal year through the investment of receipts and reinvestment of funds made available from the redemption of securities. The par value of securities redeemed during the year was \$37,656 million. Included in these amounts is \$35,321 million in certificates of indebtedness that were acquired, and \$35,312 million in certificates of indebtedness that were redeemed, within the fiscal year.

The effective annual rate of interest earned by the assets of the SMI trust fund for the 12 months ending on June 30, 1988 was 10.4 percent. This period is used because interest on special issues is paid semiannually on June 30 and December 31. The interest rate on special issues purchased by the trust fund in June 1988 was 9 1/4 percent, payable semiannually.

EXPECTED OPERATIONS AND STATUS OF THE TRUST FUND  
DURING THE PERIOD OCTOBER 1, 1988 AND DECEMBER 31, 1991

Financing for the SMI program is established annually on the basis of monthly premium rates (paid by or on behalf of the enrollees) for both basic and catastrophic benefits, supplemental catastrophic coverage premium rates, and actuarial rates for basic benefits (on which general revenue contributions are based). Beginning January 1, 1984, the annual basis has been the calendar year for basic coverage rates. Catastrophic coverage rates are on a calendar-year basis beginning January 1, 1989.

Although basic monthly premium rates and basic actuarial rates have been set only for periods through December 31, 1989 and some of the catastrophic coverage monthly premium rates have been set only for periods through December 31, 1990, projections are presented through December 31, 1991 to conform with the requirements of Section 1841(b) of the Social Security Act. It has been assumed in this report that financing after that time will be established in accordance with the provisions described in the "Nature of the Trust Fund" section.

The projections shown in the following tables are based on two sets of economic assumptions labeled Alternative A and Alternative B. These alternatives reflect two different levels of expectation of future performance of the economy. The economic and demographic assumptions underlying the alternative projections are described in detail in the 1989 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds. Appendix A presents an explanation of the effects of Alternative A and Alternative B on the projections in this report. For the projection period shown in this report, the variation in economic performance between Alternative A and Alternative B does not significantly affect the operations of the SMI program.

Under both sets of projections, it is assumed that the January 1, 1989 increase in the allowable fee limits for physician services will be 2.1 percent. Alternative A has the January 1, 1990 update as 4.3 percent and the Alternative B as 4.5 percent. The costs per enrollee for institutional and other services under the SMI program are projected to increase an average of 14.2 percent for CY 1989 and 18.8 percent for CY 1990. These increases represent price increases and increases due to other factors.

Table 5 shows the projected operations of the trust fund on a fiscal-year basis through FY 1991. Table 6 shows the corresponding development on a calendar-year basis. The level of the trust fund increased in FY 1988 and CY 1988 for two reasons. First, the actuarial rates for this period were set to slightly increase the assets to a more appropriate level. Second, actual expenditures were lower than the estimate at the time of promulgation, primarily due to the passage of the "Omnibus Budget Reconciliation Act of 1987" (Public Law 100-203) on December 27, 1987.

The actuarial rates for basic coverage for CY 1989 were promulgated with specific margins to increase aged assets and to reduce disabled assets. The "Medicare Catastrophic Coverage Act of 1988" (Public Law 100-360) created the "Medicare Catastrophic Coverage Account" as of January 1, 1989. Transactions of this account occur in CY 1989 and are reflected in this report, even though the first SMI-related catastrophic benefits are not paid until January 1, 1990. Based on these actuarial rates, the start of the catastrophic coverage transactions and the above economic assumptions, the fund is projected to reach a level of \$13.1 billion under both alternatives by the end of CY 1989 and then increase to \$14.9 billion by the end of CY 1990.

Table 5.--ESTIMATED PROGRESS OF SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND (CASH BASIS)  
FISCAL YEARS 1989-1991 AND ACTUAL DATA FOR 1967-1988  
(In millions)

Fiscal year 1/	Income						Disbursements					Balance in fund at end of year 5/	
	Premiums from enrollees			Government contributions 2/	Interest and other income 3/		Benefit payments		Administrative expenses		Total disbursements		
	Catastrophic coverage				Catastrophic income	Total income	Catastrophic	Catastrophic	Coverage	Coverage			
	Basic	Monthly	Supplemental	Basic							Coverage		Basic
<b>Historical:</b>													
1967	\$ 647	---	---	\$ 623	15	---	\$ 1,285	\$ 664	---	\$ 135 5/	---	\$ 799	\$ 486
1968	698	---	---	654	21	---	1,353	1,390	---	142	---	1,532	307
1969	903	---	---	984	24	---	1,911	1,645	---	195	---	1,840	378
1970	936	---	---	928	12	---	1,876	1,979	---	217	---	2,196	57
1971	1,253	---	---	1,245	18	---	2,516	2,035	---	248	---	2,283	290
1972	1,340	---	---	1,365	29	---	2,734	2,255	---	289	---	2,544	746
1973	1,427	---	---	1,430	45	---	2,902	2,391	---	246	---	2,637	1,424
1974	1,704	---	---	2,029	76	---	3,809	2,874	---	409	---	3,283	1,272
1975	1,887	---	---	2,330	105	---	4,322	3,765	---	405	---	4,170	1,424
1976	1,951	---	---	2,939	104	---	4,994	4,672	---	528	---	5,200	1,219
T.O.	539	---	---	878	4	---	1,421	1,269	---	132	---	1,401	1,239
1977	2,193	---	---	5,053	137	---	7,383	5,867	---	475	---	6,342	2,279
1978	2,431	---	---	6,386	228	---	9,045	8,852	---	504	---	7,356	3,968
1979	2,635	---	---	6,841	363	---	9,839	8,259	---	555	---	8,814	4,994
1980	2,928	---	---	6,932	415	---	10,275	10,144	---	593	---	10,737	4,532
1981	3,320	---	---	8,747	372	---	12,439	12,345	---	883	---	13,228	3,743
1982	3,831	---	---	13,323	473	---	17,627	14,806	---	754	---	15,560	5,810
1983	4,227	---	---	14,238	682	---	19,167	17,487	---	824	---	18,311	6,646
1984	4,907	---	---	16,811	807	---	22,525	19,473	---	899	---	20,372	8,799
1985	5,524	---	---	17,898	1,155	---	24,577	21,808	---	922	---	22,730	10,646
1986	5,699	---	---	18,076	1,228	---	25,003	25,169	---	1,049	---	26,218	9,532
1987	6,480	---	---	20,299	1,018	---	27,797	29,937	---	900	---	30,837	6,392
1988	8,756	---	---	25,418	828	---	35,002	33,682	---	1,265	---	34,947	6,447
<b>Projected:</b>													
<b>Alternative A:</b>													
1989	10,485	\$1,129	\$ 0	30,712	806	\$ 16	43,148	37,396	\$ 0	1,104	\$120	38,620	10,975
1990	11,319	1,848	2,545	33,350	880	171	50,113	43,375	1,210	1,165	178	45,928	15,160
1991	11,928	2,146	2,534	37,749	859	423	55,639	50,157	3,070	1,223	68	54,518	16,281
<b>Alternative B:</b>													
1989	10,485	1,129	0	30,712	806	16	43,148	37,402	0	1,106	120	38,628	10,967
1990	11,319	1,849	2,584	33,415	884	177	50,228	43,421	1,210	1,165	178	45,974	15,221
1991	12,048	2,147	2,597	37,781	867	445	55,885	50,322	3,090	1,227	68	54,707	16,399

1/ For 1967 through 1976, fiscal years cover the interval from July 1 through June 30; the 3-month interval from July 1, 1976, through September 30, 1976, is labeled "T.O.," the transition quarter; 1977 through 1991 cover the interval from October 1 through September 30.

2/ The payments shown as being from the general fund of the Treasury include certain interest-adjustment items.

3/ Other income includes recoveries of amounts reimbursed from the trust fund which are not obligations of the trust fund and other miscellaneous income.

4/ The financial status of the program depends on both the total net assets and the liabilities of the program (See Table 9).

5/ Administrative expenses shown include those paid in FY 1966 and 1967.

Table 6.--ESTIMATED PROGRESS OF SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND (CASH BASIS)  
CALENDAR YEARS 1989-1991 AND ACTUAL DATA FOR 1966-1988  
(In millions)

Calendar year	Income						Disbursements					Balance in fund at end of year <sup>3/</sup>	
	Premiums from enrollees			Interest and other income <sup>2/</sup>			Benefits Payments		Administrative expenses				
	Catastrophic Coverage			Government contributions <sup>1/</sup>	Catastrophic Coverage		Catastrophic Coverage	Catastrophic Coverage	Total disbursements	Total disbursements	Total disbursements		
	Basic	Monthly	Supplemental		Basic	Total Income							Basic Coverage
<b>Historical:</b>													
1966	\$ 322	---	---	\$ 0	\$ 2	---	\$ 324	\$ 128	---	\$ 75	---	\$ 203	\$ 122
1967	640	---	---	933	26	---	1,597	1,197	---	110	---	1,307	412
1968	832	---	---	858	21	---	1,711	1,518	---	184	---	1,702	421
1969	916	---	---	977	18	---	1,839	1,865	---	196	---	2,061	199
1970	1,096	---	---	1,093	12	---	2,201	1,975	---	237	---	2,212	188
1971	1,302	---	---	1,317	26	---	2,639	2,117	---	260	---	2,377	450
1972	1,382	---	---	1,389	37	---	2,808	2,325	---	289	---	2,614	643
1973	1,550	---	---	1,705	57	---	3,512	2,526	---	318	---	2,844	1,111
1974	1,804	---	---	2,225	95	---	4,124	3,318	---	410	---	3,728	1,506
1975	1,918	---	---	2,648	107	---	4,673	4,273	---	462	---	4,735	1,444
1976	2,060	---	---	3,810	107	---	5,977	5,080	---	542	---	5,622	1,799
1977	2,247	---	---	5,386	172	---	7,805	6,038	---	467	---	6,505	3,099
1978	2,470	---	---	6,287	299	---	9,056	7,252	---	503	---	7,755	4,400
1979	2,719	---	---	6,645	404	---	9,768	8,708	---	557	---	9,265	4,902
1980	3,011	---	---	7,455	408	---	10,874	10,435	---	610	---	11,245	4,530
1981	3,722 <sup>4/</sup>	---	---	11,291 <sup>4/</sup>	361	---	15,374	13,113	---	915	---	14,028	5,877
1982	3,697 <sup>5/</sup>	---	---	12,284 <sup>5/</sup>	599	---	16,580	15,455	---	772	---	16,227	6,230
1983	4,234	---	---	14,861	727	---	19,824	18,106	---	878	---	18,984	7,070
1984	5,167	---	---	17,054	959	---	23,180	19,661	---	891	---	20,552	9,698
1985	5,613	---	---	18,250	1,243	---	25,106	22,947	---	933	---	23,880	10,924
1986	5,722	---	---	17,802	1,141	---	24,665	26,239	---	1,040	---	27,299	8,291
1987	7,409 <sup>5/</sup>	---	---	23,540 <sup>5/</sup>	875	---	31,844	30,820	---	920	---	31,740	8,594
1988	8,761 <sup>5/</sup>	---	---	26,203 <sup>5/</sup>	861	---	35,825	33,970	---	1,260	---	35,230	8,990
<b>Projected:</b>													
<b>Alternative A:</b>													
1989	10,842	\$1,505	\$ 0	31,043	774	\$ 65	44,229	38,842	\$ 0	1,119	\$134	40,095	13,124
1990	11,477	1,962	2,545	32,705	909	324	49,922	45,013	1,850	1,180	150	48,193	14,853
1991	12,077	2,207	2,534	39,430	824	508	57,580	52,019	3,250	1,238	68	56,575	15,858
<b>Alternative B:</b>													
1989	10,842	1,505	0	31,044	775	66	44,232	38,854	0	1,122	134	40,110	13,112
1990	11,477	1,963	2,584	32,791	915	339	50,069	45,082	1,850	1,180	150	48,262	14,919
1991	12,238	2,208	2,597	39,444	833	547	57,867	52,237	3,270	1,242	68	56,817	15,969

<sup>1/</sup> The payments shown as being from the general fund of the Treasury include certain interest-adjustment items.

<sup>2/</sup> Other income includes recoveries of amounts reimbursed from the trust fund which are not obligations of the trust fund and other miscellaneous income.

<sup>3/</sup> The financial status of the program depends on both the total net assets and the liabilities of the program. (See Table 9).

<sup>4/</sup> Section 708 of title VII of the Social Security Act modified the provisions for the delivery of Social Security benefit checks when the regularly designated delivery day falls on a Saturday, Sunday, or legal public holiday. Delivery of benefit checks normally due January, 1982 occurred on December 31, 1981. Consequently, the SMI premiums withheld from the checks (\$264 million) and the general revenue matching contributions (\$883 million) were added to the SMI trust fund on December 31, 1981. These amounts are excluded from the premium income and general revenue income for CY 1982.

<sup>5/</sup> Delivery of benefit checks normally due January, 1988 occurred on December 31, 1987. Consequently, the SMI premiums withheld from the checks (\$692 million) and the general revenue matching contributions (\$2178 million) were added to the SMI trust fund on December 31, 1987. These amounts are excluded from the premium income and general revenue income for CY 1988. (Refer to footnote 4)

Table 7 shows the calendar year average increase in aggregate and per capita benefit payments through CY 1991. To reflect the size of the program relative to the economy as a whole, Table 7 also shows SMI benefit expenditures as a percent of Gross National Product (GNP). During CY 1988, the program grew 10.2 percent on an aggregate basis, grew 8.1 percent on a per capita basis, and increased from .68 to .70 percent of GNP. All three measures of program growth are expected to increase during the projection period, under both Alternatives A and B.

Table 7.-- GROWTH IN TOTAL CASH BENEFITS UNDER THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM THROUGH DECEMBER 31, 1991

Calendar year	Aggregate benefits (millions)	Percent change	Per capita benefits	Percent change	SMI benefits as a percent of GNP
Historical:					
1967	\$1,197		\$66.97		0.15
1968	1,518	26.8	82.27	22.8	0.17
1969	1,865	22.9	97.86	19.0	0.19
1970	1,975	5.9	101.30	3.5	0.19
1971	2,117	7.2	106.68	5.3	0.19
1972	2,325	9.8	114.91	7.7	0.19
1973	2,526	8.6	122.02	6.2	0.19
1974	3,318	31.4	144.47	18.4	0.23
1975	4,273	28.8	179.96	24.6	0.27
1976	5,080	18.9	207.39	15.2	0.29
1977	6,038	18.9	239.27	15.4	0.30
1978	7,252	20.1	279.58	16.8	0.32
1979	8,708	20.1	326.86	16.9	0.35
1980	10,635	22.1	389.87	19.3	0.39
1981	13,113	23.3	471.15	20.8	0.43
1982	15,455	17.9	545.55	15.8	0.49
1983	18,106	17.2	627.79	15.1	0.53
1984	19,661	8.6	670.77	6.8	0.52
1985	22,947	16.7	768.25	14.5	0.57
1986	26,239	14.3	859.84	11.9	0.62
1987	30,820	17.5	991.76	15.3	0.68
1988	33,970	10.2	1,072.15	8.1	0.70
Projected:					
Alternative A:					
1989	38,842	14.3	1,199.42	11.9	0.75
1990	46,863	20.7	1,421.00	18.5	0.84
1991	55,269	17.9	1,647.51	15.9	0.94
Alternative B:					
1989	38,854	14.4	1,199.79	11.9	0.75
1990	46,932	20.8	1,423.09	18.6	0.85
1991	55,507	18.3	1,654.60	16.3	0.94

## ACTUARIAL STATUS OF THE TRUST FUND

## 1. ACTUARIAL SOUNDNESS OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM

The concept of actuarial soundness, as it applies to the SMI program, is closely related to the concept as it applies to private group insurance. The SMI program essentially is yearly renewable term insurance financed from premium income paid by the enrollees and from income contributed from general revenue. Consequently, the income to the program during a 12-month period for which financing is being established should be sufficient to maintain assets at a level to pay for services (including associated administrative costs) expected to be rendered during that period, even though payment for some of these services will not be made until after the close of the period. The portion of income required to cover those benefits not paid until after the close of the year should be added to the trust fund until needed. Thus, the assets in the trust fund at any time should be no less than the costs of the benefits and administration incurred but not yet paid.

The law requires the Secretary of Health and Human Services to establish income for basic coverage on the basis of incurred costs (including associated administrative costs) for the 12-month period for which financing is being established. Financing on an incurred basis means that income should be sufficient to cover the cost of services rendered during the period. However, since the income per enrollee (premium plus Government contribution rate) is established prospectively, it is subject to projection error. Additionally, legislation enacted after the financing has been established but effective for the period for which

financing has been set, may affect program costs. As a result, the income to the program may not be equal to incurred costs; therefore, trust fund assets should be maintained at a level which is adequate to cover the impact of a moderate degree of variation between actual and projected costs, as well as the value of incurred but unpaid expenses.

As discussed in the "Nature of the Trust Fund" section, catastrophic coverage monthly premiums and supplemental catastrophic coverage premium rates have been established by law for various periods of time as well as the manner in which they will be determined beyond those periods. The catastrophic income will be added to the trust fund assets when it is received during the financing period.

In testing the actuarial soundness of the SMI program, it is not appropriate to look beyond the period for which the enrollee premium rates and level of general revenue financing have been established. The primary tests of actuarial soundness, then, are that: (1) assets and income for years for which financing has been established be sufficient to meet the projected benefits and associated administrative expenses incurred for that period and (2) assets be sufficient to cover projected liabilities that will have been incurred by the end of that time but will not have been paid yet. Even if these tests of actuarial soundness are not met, the program can continue to operate if the trust fund remains at a level adequate to permit the payment of claims as presented. However, to protect against the possibility that cost increases under the program will be higher than assumed, assets should be sufficient to include contingency levels to cover the impact of a moderate degree of variation between actual and projected costs.

Contingency levels to accommodate cost increases that may be higher than expected are measured by the excess of assets over liabilities. An appropriate target level for this excess depends on numerous factors. The most important of these factors are: (1) the difference from prior years in the actual performance of the program and the estimates made at the time financing was established and (2) the expected relationship between incurred and cash expenditures. Ongoing analysis is made of the former as trends in the differences vary over time.

## 2. INCURRED EXPERIENCE OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM

The tests of actuarial soundness of the SMI program noted above rely on the incurred experience of the program. Cash disbursements for benefits and administrative expenses by themselves are misleading, due to the relatively large liabilities outstanding at any time for benefits and processing costs. Outstanding liabilities result from the lag between the time that services are performed and the time that payments for them are made.

The experience of the program is substantially more difficult to determine on an incurred basis than on a cash basis. Payment for some services is reported only on a cash basis, and the incurred experience must be inferred from the cash payment information. For recent time periods, the tabulations of bills are incomplete due to normal processing delays. Finally, since bills are tabulated only for a sample of beneficiaries, the data is subject to bias and random fluctuation inherent in the sampling process.

Table 8 shows the estimated transactions of the trust fund on an incurred basis. For the reasons stated above, the incurred experience must be viewed as an estimate even for historical years. Various checks, such as cash outlay data, assure that the estimates are reasonably close, however.

### 3. ACCUMULATED EXCESS OF ASSETS OVER LIABILITIES

The liability outstanding at any time for the cost of services performed for which no payment has been made is referred to as "benefits incurred but unpaid." Estimates of the amount of benefits incurred but unpaid as of the end of each financing period, and of the administrative expenses related to processing these benefits, appear in Table 9. For some years of the program, assets have not been as large as outstanding liabilities. Nonetheless, the fund has remained positive, allowing claims to be paid.

Program financing has been established for all components of SMI through December 31, 1989. The financing for basic coverage for CY 1989 was designed to maintain the excess of assets over liabilities as a percent of incurred expenditures for basic coverage for the following year. However, this was accomplished by including specific margins to increase the excess of assets over liabilities for the aged and to reduce it for the disabled. Since that time, the experience of the basic program appears to be better than expected. Furthermore, beginning in CY 1989, the SMI transactions of the Medicare Catastrophic Coverage Account will be added to the trust fund. For CY 1989, these transactions are primarily income transactions since SMI catastrophic benefits are not effective until January 1, 1990. As a result of both the more favorable experience of the basic program and the catastrophic transactions, the excess of assets over liabilities is

Table 8.--ESTIMATED INCOME AND DISBURSEMENTS INCURRED UNDER SUPPLEMENTARY MEDICAL INSURANCE PROGRAM FOR FINANCING PERIODS THROUGH DECEMBER 31, 1989  
(in millions)

Financing period	Premiums from enrollees			Government contributions	Interest and other income		Benefits payments		Administrative Expenses		Net operations in year
	Basic	Catastrophic coverage			Basic	Catastrophic	Basic	Catastrophic	Basic	Catastrophic	
		Supplemental									
Historical:											
12-month period ending June 30,											
1967	\$ 447	---	---	\$ 447	\$ 15	---	\$ 1,109	---	\$ 123 1/	---	\$ 77
1968	698	---	---	698	21	---	1,443	---	135	---	-181
1969	903	---	---	903	24	---	1,750	---	198	---	-118
1970	936	---	---	936	12	---	1,929	---	213	---	-258
1971	1,253	---	---	1,253	18	---	2,090	---	259	---	175
1972	1,340	---	---	1,340	29	---	2,289	---	259	---	161
1973	1,427	---	---	1,426	45	---	2,500	---	302	---	96
1974	1,704	---	---	2,031	76	---	3,149	---	353	---	309
1975	1,887	---	---	2,396	105	---	3,928	---	438	---	22
1976	1,951	---	---	2,972	109	---	4,818	---	485	---	-271
1977	2,156	---	---	4,697	157	---	5,861	---	515	---	634
1978	2,358	---	---	5,991	254	---	6,948	---	511	---	1,144
1979	2,601	---	---	6,570	365	---	8,171	---	649	---	716
1980	2,823	---	---	6,627	421	---	9,938	---	645	---	-712
1981	3,178	---	---	8,219	371	---	12,054	---	692	---	-978
1982	3,737	---	---	12,488	495	---	14,061	---	728	---	1,931
1983	4,202	---	---	13,951	686	---	17,071	---	708	---	1,060
Transition semester 2/	2,120	---	---	7,836	374	---	9,721	---	483	---	126
Calendar year											
1984	5,167	---	---	17,052	962	---	20,266	---	869	---	2,046
1985	5,613	---	---	18,243	1,248	---	22,776	---	986	---	1,342
1986	5,722	---	---	17,802	1,141	---	26,656	---	1,000	---	-2,991
1987	6,717	---	---	21,377	880	---	31,073	---	1,008	---	-3,107
1988	9,453	---	---	28,339	903	---	35,143	---	1,059	---	2,493
Projected:											
Calendar year											
Alternative A:											
1989	10,842	\$1,505	80	31,019	798	865	39,806	80 3/	1,119	8134	3,170
Alternative B:											
1989	10,842	1,505	0	31,019	800	66	39,820	0 3/	1,122	134	3,156

1/ Includes administrative expenses incurred prior to the beginning of the program.

2/ The transition semester is the 6-month period July 1, 1983 to December 31, 1983.

3/ Catastrophic BHI benefits are effective beginning January 1, 1990.

Table 9.--SUMMARY OF ESTIMATED ASSETS AND LIABILITIES OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM AS OF THE END OF THE FINANCING PERIOD, FOR PERIODS THROUGH DECEMBER 31, 1989 (Dollar amounts in millions)

	Balance in trust fund	Government contributions due but unpaid	Total assets	Benefits incurred but unpaid	Administrative costs incurred but unpaid	Total liabilities	Excess of assets over liabilities	Ratio 1/
Historical:								
As of June 30,								
1967	\$ 486	\$ 24	\$ 510	\$ 445	\$ -12	\$ 433	\$ 77	0.05
1968	307	88	395	498	1	499	-104	-0.05
1969	378	7	385	603	4	607	-222	-0.10
1970	57	15	72	553	0	553	-481	-0.21
1971	290	22	312	608	11	619	-307	-0.12
1972	481	-3	478	642	-19	623	-145	-0.05
1973	746	-7	739	751	37	788	-49	-0.01
1974	1,272	-5	1,267	1,026	-19	1,007	260	0.06
1975	1,424	67	1,491	1,189	14	1,203	288	0.05
1976	1,219	106	1,325	1,335	-29	1,306	19	0.00
1977	2,170	91	2,261	1,607	3	1,610	651	0.09
1978	3,786	48	3,834	1,998	40	2,038	1,796	0.20
1979	4,880	2	4,882	2,249	123	2,372	2,510	0.24
1980	4,657	0	4,657	2,671	188	2,859	1,798	0.14
1981	3,801	0	3,801	2,967	13	2,980	821	0.06
1982	5,534	1	5,535	2,792	-9	2,783	2,752	0.16
1983	6,780	2	6,782	3,018	-48	2,970	3,812	0.19
As of December 31,								
1983	7,070	1	7,071	3,201	-69	3,132	3,939	0.19
1984	9,698	2	9,700	3,806	-91	3,715	5,985	0.25
1985	10,924	0	10,924	3,435	-38	3,597	7,327	0.27
1986	8,291	0	8,291	4,052	-98	3,954	4,337	0.14
1987	8,394 2/	0	8,394 2/	4,305	-11	7,164 2/	1,230	0.03
1988	8,990	0	8,990	5,479	-212	5,267	3,723	0.09
Projected:								
Alternative A:								
1989 3/	13,124	0	13,124	6,443	-212	6,231	6,893	0.14
Alternative B:								
1989 3/	13,112	0	13,112	6,445	-212	6,233	6,879	0.14

1/ Ratio of the excess of assets over liabilities to the following year's total incurred expenditures.

2/ Section 708 of Title VII of the Social Security Act modified the provisions for the delivery of Social Security benefit checks when the regularly designated day falls on a Saturday, Sunday, or legal public holiday. Delivery of benefit checks normally due January, 1988 occurred on December 31, 1987. Consequently, the SMI premiums withheld from the checks (\$692 million) and the general revenue matching contributions (\$2,178 million) were added to the SMI trust fund on December 31, 1987 and were included in the liabilities.

3/ Beginning CY 1989, the transactions of Medicare Catastrophic Coverage Account are included in the assets and liabilities of the trust fund.

expected to increase from \$3,723 million at the end of December 1988 to \$6,893 million under alternative A and \$6,879 million under alternative B. This excess as a percent of incurred expenditures for the following year is expected to increase from 9.1 percent as of December 31, 1988 to 13.8 percent as of December 31, 1989.

#### 4. SENSITIVITY TESTING

Some of the assumptions underlying the projections presented in this report are highly uncertain, and variations in these assumptions would have a substantial impact on expenditures. In order to test the future status of the program under varying assumptions, a low cost projection and a high cost projection were prepared by varying these key assumptions. The low and high cost alternative sets of assumptions are intended to reflect growth rates for the various components of program costs which are more favorable and adverse, respectively, than those of the intermediate projections (Alternatives A and B) and which are not unreasonable themselves in light of the nature and historical experience of the program. As such, they provide a range of financial outcomes within which the actual experience of the program might reasonably be expected to fall. The values for the alternative assumptions were determined from a study on the average historical variation in the respective increase factors.

Table 10 indicates that, under the low cost assumptions, trust fund assets would exceed liabilities by the end of December 1989 (the period through which financing for all components has been established), reaching a level of 22.0 percent of the following year's incurred expenditures. If these low growth rates were actually to materialize, then subsequent financing rates would be adjusted downward in order to lower the excess of assets over liabilities to an appropriate

Table 10.--ACTUARIAL STATUS OF THE SMI TRUST FUND UNDER THREE SETS OF ASSUMPTIONS FOR FINANCING PERIODS THROUGH DECEMBER 31, 1989

	Alternative B projection			Low cost projection			High cost projection		
	12-Month period ending June 30,			12-Month period ending June 30,			12-Month period ending June 30,		
	1988	1989	1990	1988	1989	1990	1988	1989	1990
Projection factors (in percent): 1/									
Physician fees 2/									
Aged	4.3	2.5	3.3	4.2	2.3	2.5	4.3	2.8	4.1
Disabled	4.3	2.5	3.3	4.2	2.3	2.5	4.3	2.8	4.1
Utilization of physician services 3/									
Aged	6.2	5.2	6.6	5.4	3.3	5.0	7.0	7.1	8.3
Disabled	6.0	4.4	6.8	4.9	0.2	2.2	7.1	8.6	11.4
Outpatient hospital services per enrollee									
Aged	12.3	7.9	17.5	10.2	2.4	9.1	14.3	13.3	26.0
Disabled	22.2	7.0	16.0	17.4	2.4	3.5	26.9	11.5	28.5
Actuarial status (in millions):									
	As of December 31,			As of December 31,			As of December 31,		
	1987 4/	1988	1989	1987 4/	1988	1989	1987 4/	1988	1989
Assets	\$8,394	\$8,990	\$13,112	\$8,394	\$8,990	\$15,074	\$8,394	\$8,990	\$11,032
Liabilities	7,164	5,267	6,233	6,997	4,281	5,057	7,331	6,267	7,435
Assets less liabilities	1,230	3,723	6,879	1,397	4,709	10,017	1,063	2,723	3,597
Ratio of assets less liabilities to expenditures (in percent) 5/									
	3.4	9.1	13.8	3.9	12.1	22.0	2.9	6.3	6.6

1/ Because of the manner in which alternative economic assumptions affect the projected operations of the SMI program, there is not a substantial difference in the projections based upon the two sets of assumptions. Therefore only one projection, Alternative B is presented here. Appendix A presents an explanation of the effects of Alternative A and Alternative B on the projections in the report. These increases represent increases of basic SMI services.

2/ As recognized for payment under the program.

3/ Increase in the number of services received per enrollee and greater relative use of more expensive services.

4/ Section 708 of Title VIII of the Social Security Act modified the provisions for the delivery of Social Security benefit checks when the regularly designated delivery day falls on a Saturday, Sunday, or legal public holiday. Delivery of benefit checks normally due January, 1988 occurred on December 31, 1987. Consequently, the SMI premiums withheld from the checks (\$692 million) and the general revenue matching contributions (\$2,178 million) were added to the SMI trust fund on December 31, 1987 and were included in the liabilities.

5/ Ratio of assets less liabilities at the end of the year to total incurred expenditures during the following year, expressed as a percent.

level to maintain the actuarial soundness of the trust fund. Under the high cost assumptions, trust fund assets would still exceed liabilities by the end of December 1989, reaching a level of 6.6 percent of the following year's incurred expenditures. Therefore, even if these high growth rates were to occur, assets would still be sufficient to cover outstanding liabilities.

## CONCLUSION

The financing for all components of the SMI program has been established through December 1989. Financing for basic coverage was established by the setting of the standard monthly premium rate (paid by or on behalf of each enrollee) of \$27.90 for CY 1989 and of actuarial rates that determine the amount to be contributed from general revenue on behalf of each enrollee. General revenue contributions are expected to account for 72.8 percent of all SMI income for basic coverage during CY 1989. Financing for catastrophic coverage was established by the setting of the catastrophic coverage monthly premium (paid by or on behalf of each enrollee) of \$4.00 (for most enrollees) for CY 1989 and of the supplemental catastrophic coverage premium rate of \$22.50 for each \$150 of adjusted income tax liability for individuals who are Medicare-eligible for more than six months in the taxable year 1989.

Under both sets of intermediate assumptions used in this report, income is projected to exceed disbursements during CY 1989 and CY 1990. Income is composed of premiums paid by the enrollees for both basic and catastrophic coverage, general revenue contributions, and interest earned by the trust fund. As a result, the assets in the trust fund on a cash basis are projected to increase from \$9.0 billion at the end of CY 1988 to an estimated \$13.1 billion at the end of CY 1989 and then to increase to an estimated \$14.9 billion at the end of CY 1990.

The financing for basic coverage for CY 1989 was established to increase aged assets and to decrease disabled assets while maintaining the overall relative level of the excess of assets over liabilities. However, since that time, the experience of the basic program appears to be more favorable than expected. In addition, beginning in CY 1989, the SMI transactions of the Medicare Catastrophic Coverage

Account will be added to the SMI trust fund. For CY 1989, these transactions are primarily income transactions since SMI catastrophic benefits are not effective until January 1, 1990. As a result of both of these situations, the excess of assets over liabilities is expected to increase from \$3,723 million at the end of December 1988 to \$6,893 million under alternative A, and \$6,879 million under alternative B, by the end of December 1989, representing 13.8 percent of the projected incurred expenditures. Under more pessimistic assumptions as to cost increases, assets based on financing already established will still be sufficient to cover outstanding liabilities. Hence, the financing established through December 1989 is sufficient to cover projected benefit and administrative costs incurred through that time period, and to maintain a level of trust fund assets adequate to cover the impact of a moderate degree of variation between actual and projected costs.

Although the SMI program is financially sound, the Board notes with concern the rapid growth in the cost of the program. Growth rates have been so rapid that outlays of the program have nearly doubled in the past five years. For the same time period, the program grew 32 percent faster than the economy as a whole. This growth rate shows no sign of abating despite recent efforts to control the cost of the program.